SCIENCE
Fourth Grade

LIFE SCIENCE STANDARDS

1.0 Cell Structure and Function

The student will investigate the structure and function of plant and animal cells.

Key	Reporting Category		PLT ACTIVITY
I		Examine a variety of plant and animal cells.	N/A
A	**SF**	Identify the function of specific plant and animal parts.	28 Air Plants, p. 120 42 Sunlight and Shades …., p.182 62 To Be a Tree, p. 265 63 Tree Factory, p. 269 65 Bursting Buds, p. 277
A	**SF**	Recognize the basic structure of plant and animal cells.	N/A
A	**SF**	Identify animal and plant cell structures and functions.	N/A

2.0 Interactions Between Living Things and Their Environment

The student will investigate how living things interact with one another and with nonliving elements of their environment.

I		Examine and relate how plants and animals interact with each other and their environment.	3 Peppermint Beetle p. 23 41 How Plants Grow p. 179 46 School Yard Safari p. 197
A	**E**	Select plants and animals found in a specific environment.	7 Habitat Pen Pals p. 37 9 Planet Diversity p. 45 10 Charting Diversity p. 50
A	**E**	Recognize how plants and animals interact with each other in their environment.	22 Trees as Habitats p. 102 23 The Fallen Log p. 105 27 Every Tree for Itself p. 117 45 Web of Life p. 194 47 Are Vacant Lots Vacant? p. 200
I		Provide evidence and give examples of environmental changes caused by living things.	28 Air Plants p. 120 30 Three Cheers for Trees! p. 130 36 Pollution Search p. 153 40 Then & Now p. 174
A	**E**	Identify ways that organisms affect their environment.	23 The Fallen Log p. 105 44 Water Wonders p. 188 45 Web of Life p. 194 80 Nothing Succeeds ….p. 345 89 Trees for Many Reasons p. 387

KEY
I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY
SF = Structure & Function of Organisms ME = Motion & Forces, Forms of Energy E = Ecology M = Matter
LC = Life Cycles & Biological Change ER = Earth Features & Resources SC = Space, Weather, & Climate

Note: "A" indicates the state curriculum (CRT) assessment only.
All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.

3.0 Food Production and Energy for Life

The student will study the basic parts of plants, investigate how plants produce food, and discover that plants and animals use food to sustain life.

D		Explain that animals must obtain food and use food for energy.	24 Nature's Recyclers p. 108
A	**SF**	Compare how various animals obtain and use food for energy.	23 The Fallen Log p. 105 45 Web of Life p. 194
A	**SF**	Match the edible parts of plants with particular plant structures.	16 Pass the Plants, Please p. 77,
D		Compare how specific animals obtain oxygen (e.g., gills, lungs).	N/A
A	**SF**	Match the animal with their means of obtaining oxygen.	N/A

4.0 Heredity and Reproduction

The student will understand the basic principles of inheritance.

D		Compare the traits of offspring with those of the parent.	66 Germinating Giants p. 279 79 Tree Life Cycle p. 341
A	**LC**	Distinguish offspring from the parent.	N/A
A	**LC**	Recognize the relationship between reproduction and the survival of a species.	79 Tree Life Cycle p. 341
D		Describe the life cycle of an animal (i.e., frog, mealworm).	N/A
A	**LC**	Select the illustration that depicts the life cycle of a specific organism.	79 Tree Life Cycle p. 341

5.0 Diversity and Adaptation Among Living Things

The student will understand that living things have characteristics that enable them to survive in their environment.

D		Classify animals according to their characteristics.	6 Picture This! p. 34 10 Charting Diversity p. 50
A	**E**	Match a plant or animal adaptation to a particular environmental condition.	7 Habitat Pen Pals p. 37 10 Charting Diversity p. 50 11 Can It Be Real? p. 54 25 Birds and Worms p.111
A	**E**	Compare and contrast groups of organisms according to their major features.	2 Get In Touch With Trees p. 20 6 Picture This! p. 34 11 Can It Be Real? p. 54 43 Have Seeds, Will Travel p. 185 64 Looking At Leaves p. 273
A	**E**	Match the form of structures found in living things to their function.	11 Can It Be Real? p. 54 43 Have Seeds, Will Travel p. 185 62 To Be A Tree p. 265

6.0 Biological Change

The student will understand that living things have changed over time.

D		Examine fossils and explain how they provide information about the types of organisms that lived in the past.	N/A
A	**LC**	Match fossil evidence with organisms that are alive today.	N/A
A	**LC**	Identify animal and plant populations as thriving, threatened, endangered, or extinct.	88 Life on the Edge p. 382
A	**LC**	Infer possible causes of extinction.	N/A

KEY
I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY
SF = Structure & Function of Organisms ME = Motion & Forces, Forms of Energy E = Ecology M = Matter
LC = Life Cycles & Biological Change ER = Earth Features & Resources SC = Space, Weather, & Climate

Note: "A" indicates the state curriculum (CRT) assessment only.
All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.

EARTH SCIENCE STANDARDS

7.0 Earth and Its Place in the Universe

The student will investigate the structure of the universe.

D		Identify and order the planets in the solar system by their distance from the sun.	N/A
A	**SC**	Determine the order of the planets according to their distance from the sun.	N/A
A	**SC**	Recognize that the length and position of a shadow are related to the location of the sun.	67 How Big is Your Tree? p. 284
D		Demonstrate how the earth rotates and revolves.	N/A
D		Simulate the changing shape of the moon.	N/A
A	**SC**	Identify the phases of the moon in the correct sequence.	N/A

8.0 Atmospheric Cycles

The student will investigate the relationships among atmospheric conditions, weather, and climate.

D		Identify and use the proper tools to measure atmospheric conditions (i.e., barometer, thermometer, anemometer, and rain gauge).	48 Field, Forest, and Stream p. 203
A	**SC**	Identify the cloud type(s) associated with specific weather conditions.	N/A
A	**SC**	Choose the appropriate instrument for measuring a given atmospheric condition.	48 Field, Forest, and Stream p. 203
I		Describe how oceans affect weather and climate.	
A	**SC**	Identify the basic features of the water cycle.	44 Water Wonders p. 188

9.0 Earth Features

The student will understand that the earth has many geological features that are constantly changing.

I		Observe and describe how wind and water change the earth's geological features.	N/A
A	**ER**	Recognize specific geological features.	N/A
A	**ER**	Determine how wind and water change the earth's geological features	N/A
I		Identify the earth's layers.	N/A
A	**ER**	Identify the layers of the earth.	N/A

10.0 Earth Resources

The student will investigate the properties, uses, and conservation of earth's resources.

D		Classify earth materials according to their use.	39 Energy Sleuths p. 167 69 Forest for the Trees p. 291 70 Soil Stories p. 297 82 Resource-Go-Round p. 355
A	**ER**	Choose the appropriate use for an earth material.	15 A Few of My Favorite … p. 75 82 Resource-Go Round p. 355
I		Identify the different components of soil.	70 Soil Stories p. 297
A	**ER**	Identify the basic characteristics of soil.	48 Field, Forest, and Stream p. 203 70 Soil Stories p. 297
A	**ER**	Distinguish between renewable and nonrenewable resources.	14 Renewable or Not? p. 69 15 A Few of My Favorite … p. 75 82 Resource-Go-Round p. 355

KEY
I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY
SF = Structure & Function of Organisms ME = Motion & Forces, Forms of Energy E = Ecology M = Matter
LC = Life Cycles & Biological Change ER = Earth Features & Resources SC = Space, Weather, & Climate

Note: "A" indicates the state curriculum (CRT) assessment only.
All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.

PHYSICAL SCIENCE STANDARDS

11.0 Forces and Motion

The student will investigate the effects of force on the movement of objects.

A	**ME**	Recognize the effects of gravity.	N/A
A	**ME**	Select factors that have the greatest effect on the motion of an object.	N/A
A	**ME**	Determine how speed affects distance traveled over time.	N/A
A	**ME**	Recognize simple machines (i.e., inclined plane, lever, and pulley)	N/A
I		Identify factors that affect the amount of friction.	N/A

12.0 Structure and Properties of Matter

The student will investigate the characteristic properties of matter.

M		Describe and compare observations made of objects using the naked eye, magnifying glass, and microscope.	70 Soil Stories p. 297
M		Describe matter by its observable physical properties (i.e., color, shape, texture, weight, volume, and length).	2 Get In Touch With Trees p. 20 9 Planet Diversity p. 45 21 Adopt A Tree p. 97 48 Field, Forest and Stream p. 203 70 Soil Stories p. 297
A	**M**	Select an object according to its observable physical properties.	
A	**M**	Identify states of matter.	44 Water Wonders p. 188
A	**M**	Determine how various types of matter change state.	

13.0 Interactions of Matter

The student will investigate the interactions of matter.

A	**M**	Choose features associated with physical changes.	51 Make Your Own Paper p. 224
A	**M**	Identify characteristics of different types of mixtures.	
A	**M**	Determine methods for separating mixtures.	

14.0 Energy

The student will investigate energy and its uses.

A	**ME**	Identify different forms of energy.	4 Sounds Around p. 26, 39 Energy Sleuths p. 167 42 Sunlight & Shades of Green p. 182 73 Waste Watchers p. 314
I		Describe how light behaves when it strikes different surfaces.	N/A
I		Explain how the volume and pitch of sound are controlled.	N/A
A	**ME**	Distinguish between the volume and the pitch of sound.	N/A
I		Construct and explain a simple electrical circuit.	N/A
A	**ME**	Select a simple electrical circuit.	N/A
I		Categorize materials as conductors or insulators.	N/A
A	**ME**	Recognize that various materials conduct heat.	N/A

KEY
I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY
SF = Structure & Function of Organisms ME = Motion & Forces, Forms of Energy E = Ecology M = Matter
LC = Life Cycles & Biological Change ER = Earth Features & Resources SC = Space, Weather, & Climate

Note: "A" indicates the state curriculum (CRT) assessment only.
All the skills ("I"…"D"…"A"…"M") are addressed in the classroom assessment.